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ABSTRACT

This course is designed to help teachers learn how to write performance objectives. It covers instruction on identifying goal statements, identifying the three parts of a performance objective, writing five performance objectives, writing cognitive objectives at all six levels, recognizing psychomotor objectives at all five levels, recognizing and writing performance objectives in the affective domain, and recognizing and writing the three levels of performance objectives. A related document is EA 004 849. (Author/DN)

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A PROGRAMMED COURSE FOR THE WRITING OF PERFORMANCE OBJECTIVES

A Constructed Response Linear Program

Produced by
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DR. LOWELL C. ROSE, EXECUTIVE SECRETARY

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SLIDER

READ THE DIRECTIONS BELOW BEFORE YOU BEGIN THE PROGRAMMED MATERIAL.

1. As you turn each page, cover the answers that appear in the margin of the page with this slider.

2. After you answer each question, uncover the answer to check your response.

3. Do not move on to the next frame if your answer(s) are not correct. Re-read the material and follow the directions contained in the frame.

4. **REMEMBER** it is important that the answers that appear in the margin of each page be covered with this Slider before you begin reading the information contained in each frame.

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Introduction

TO THE LEARNER:

During the next four weeks you will be participating in a series of independent and group activities designed to improve your skill in writing performance objectives.

Between each meeting you will be required to work independently through the programmed material contained in this booklet. Listed below are the procedures you will be following:

Meeting 1 is designed as an orientation meeting. Your instructor will outline the procedures to be followed and present the rationale for establishing performance objectives.

Independent Activity:

1.0 Complete Frames 1 through 34 in this Booklet

1.1 The answers to Frames 20, 27 and 32 should be written in the booklet in the spaces provided

1.2 The objectives written for Frame 34 should be reproduced (ditto) so as to have one copy of your objectives for each member of your group

Meeting 2 will consist of a critique of the objectives you have written and group discussion and instruction.

Independent Activity:

2.0 Complete Frames 35 through 115

2.1 The objectives you have written for Frame 42 and the objectives for any two of the following Frames, 59, 68, 76, 88, and 94, should be reproduced so as to have one copy of your objectives for each member of your group

Meeting 3 will consist of a critique of the objectives you have written and group discussion and instruction.

Independent Activity:

3.0 Complete Frames 116 through 139

3.1 The objectives you have written for Frames 129, 133 and 136 should be reproduced so as to have a copy for each member of your group

Meeting 4 will consist of a critique of the objectives you have written and group discussion and instruction. This meeting will conclude the program.

NOTE: The pages following the last frame of this program contain assignments which you will be completing during the training sessions. Do not complete these assignments until your instructor requests it. They are not a part of the formal programmed material.

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PART I

By the time you have finished this program you will be able to do the following things:

1. Identify two terms: GOAL STATEMENTS and SIMILAR GOALS.
2. Identify the three parts of a performance objective.
3. Write five (5) performance objectives.
4. Write cognitive objectives.
5. Recognize psychomotor objectives.
6. Recognize and write affective objectives.
7. Recognize and write the three levels of Performance Objectives. You will be asked to **write** during the program so you'll want to be sure your pencil is sharp and your eraser is plentiful. You will want to read this material very carefully. When you have finished, this program will be yours to refer to during the writing of objectives for your own school. Be sure you write clearly, and completely so it can be most useful to you.

We are now ready to begin.

1. A **goal statement** is a statement of broad direction or intent that is timeless, and not concerned with achievement within a specified time. For example, "all graduates should develop a desire for learning now and in the future" is a goal statement.

2. "All children who graduate from Edsel High School should learn how to respect and get along with people who think, dress, and act differently" is another example of a

2. Goal statement

3. A goal statement is timeless and not concerned with achievement within a specified time. Is this a goal statement?

   By Christmas-time behavior problems will have decreased 50% from incidence at the beginning of any school year. Yes No

3. No

4. No, of course not. It is not

4. Within a specified time.

5. Two characteristics help us define a goal statement:

   1.

   2.

5.
   1. Timeless
   2. Not concerned with achievement within a specified time.

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6. Which of these would be goal statements? Circle the numbers.

   1. Understand and practice democratic ideas and ideals.

   2. All children will read at 8.0 as measured by a standardized test by the end of the seventh grade.

   3. Develop good character and self-respect.

6. 1, 3

7. A goal statement has two qualities:

   1.

   2.

   It is different from **similar goals,** Similar goals are statements which are needed to clarify further goal statements. Similar goals may be thought of as being clarifiers.

7.

1. Timeless
2. Not concerned with achievement within a specified time.

8. "The learner shall develop background and skills in the use of numbers, natural sciences, mathematics, and social sciences is an example of a _____ for the goal statement "Gain A General Education." "Develop a fund of information and concepts" is another example of a similar goal.

8. Similar goal

9. "Survival of you in this program "is a _____. Achievement of each of the 5 objectives is an example of _____.

9. Goal statement
Similar goals

10. Simply stated, then, goal statements are really timeless goals a community might set for its schools. Similar goals are _____ used to help interpret the goal statements.

10. Clarifiers

11. It would be very difficult for anyone to say that democratic processes, problem solving, and effective citizenship are **not** goals of their teaching. It would be very difficult to **prove** that democratic processes, problem solving, and effective citizenship are produced by social science, English, science, and physical education. Yet every day we keep these things in mind as we teach.

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12. The public is no longer satisfied with our not measuring how much each of us contribute to these community goal statements. Somehow when everyone contributes it **may** become no one's job. So, if we write objectives which are measurable, we can either accept responsibility or not ....but at least we'll honestly state our degree of responsibility. It becomes easier for planning who is responsible for what, makes it easier to plan and assures the learner that he will meet the goal statements of his community.

13. For example, we would agree that it would be great if all of the students were learning to spell so each could write and communicate. But who teaches spelling? Who teaches science words? Who teaches history words? Who teaches how to communicate? We all do, of course. But if the learner does not spell well and does not communicate what he really wants to, who should help? One thing about **performance objectives** that is exciting: they are written in terms of the LEARNER and his product. The objective **does not** tell the teacher how to teach. It **does not** tell at what time the teacher is to teach it. It **does** tell what the LEARNER is to know or be able to do. Isn't that a new wrinkle? Now, if the teacher teaches and the learner does not learn that behavior, should we sack the teacher? Of course **not**!!! The teacher taught.* It is the **learner's problem** that **he** did not learn. Don't you agree that that is exciting?

*This assumes, of course, the teacher did try several methods to teach the particular child.

14. So, if the learner does not spell well and does not communicate what he really wants to, what should we do? Circle one number. 14. 2

1. Fire the rotten teacher.
2. Back again with a new method until the learner learns.
3. After all, what did you expect, the earlier teachers were not too hot.
4. Give up on him until he drops out.

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15. Yes, we go back again with a new method until the learner learns. Now it becomes his problem to prove he knows or can do and not a matter of holding him, giving up on him, or being fired.

In order to write performance objectives for the learner, we need to know three things to be included:

1. What must be known or done **by the learner**
2. How the learner is to do it or demonstrate it
3. How well it will be done or shown

We would not write a goal statement. We would not write a course description. We would write a _____part objective.

15. 3

16. Let's take one part: what must be known or done by the learner? What kinds of things do you think a learner could be asked to KNOW or DO?

Facts? Projects? Ideas? Definitions? Places or things to identify? Problems to be solved? You certainly **could** ask the learner to do those things.

17. Let's try some. Put a circle around the word(s) that tell what the learner is to know or do.

1. The learner sh[illegible] identify the three major causes of the American [illegible]lution.
2. The learner s[illegible] jump higher than a kite.
3. The learner shall identify 14 verbs in a list of 20 words.
4. The learner shall solve quadratic equations.
5. The learner shall circle the word(s) that tell what he is to know or do.

Did you get them all right? Great.

Didn't you? Oooooops. Remember that you are asked to identify what the learner is to KNOW or DO. OK?

17. You should have circled: identify, 3 major causes, jump, identify 14 verbs, solve equations, and circle words.

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18. Now let's seriously try to check it out. Here are 5 objectives. Identify without error the element **WHAT MUST BE DONE**. Underline the element in each of these performance objectives.

Example: The learner will **identify six of ten map symbols** commonly found on U.S. Geological Survey maps and **describe what each represents.** 90% accuracy.

OK, here we go.

1. From a given list of words and using a standard dictionary the student will be able to look up 15 words and write the dictionary definitions without error in a 30-minute period of time.
2. The student will be able to operate three standard type phonographs and play records on them.
3. The student assistant will be able to utilize the Dolch vowel game in a simulated exercise without error, as judged by the instructor.
4. The learner will demonstrate addition, subtraction, multiplication, and division drill skills using the Toy Money kit as measured by prepared questions. 90% proficiency.
5. Given a paragraph, the learner will underline each noun and identify whether it is common or proper, and identify its functions: subject, direct object, predicate nominative, or indirect object. 90% accuracy.

18.

1. Look up 15 words and write the dictionary definitions.
2. Operate three standard type phonographs and play records on them.
3. Utilize the Dolch vowel game.
4. Demonstrate +, −, ×, ÷ drill skills.
5. Underline each noun and identify.

19. How did you do? If you got them **all right,** march on. If you missed one or more, **back to frame 15.** So remember, the success of this program is only as great as your learning. You, the learner, are to produce the behavior. If you don't, then it is **YOUR problem.** So, honest Abe. Did you **really** get them all right?

20. All right now. Stored away in your head is the fact that performance objectives have three parts, that one part always tells what the learner is to know or do. So, here is your opportunity to shine. Using **any** subject you teach, write out 5 examples of the "what" element of the performance of the learner.

1.

2.

3.

4.

5.

20. We can't tell you right or wrong. Have your instructor check these... OK??

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21. All right. You're in good shape. You noticed that all five told the **learner** what **he** was to know or do. It did **not** tell a teacher how to teach. So now we know that the learner is to know or do. Now we need to know **HOW** he is going to show us that he knows or can do it. Are we going to give him a test? Have an oral report? Have him physically do it? Role play? Could be make something? Could he exhibit a certain behavior? Certainly!! All of those would be possible. The point is, the learner has to do something that you **can observe.**

22. Could you ask the learner to **understand?** Yes No
to **value?** Yes No
to **appreciate?** Yes No
Without clearly defining what these verbs mean?

22. No, no, no.

23. If you said no to all three you are right!! You could ask him to understand, to value, to appreciate, but you'd never know when he was doing those things unless you clearly defined the behavior the student would be exhibiting when he understands, values, or appreciates.

24. Now we know that the the learner has to exhibit something so we can see that he knows or can do. Could you SEE these? Circle the numbers of the ones you could SEE.

1. The learner shall write a paragraph using a minimum of 10 adverbs.
2. The learner shall jump a minimum of 4 feet on the high jump.
3. The learner shall enjoy **Tom Sawyer.**
4. The learner shall underline each correct answer from among three given for 20 problems of decimal addition.
5. The learner shall enjoy attending three concerts during the year.

Did you circle the correct ones? Good. The others are pleasant ones, but you couldn't see the learner doing the enjoying, could you? You're catching on. Go on. If you didn't, cut back to frame 21 and re-read. Remember, the learner must be doing something we can **see.**

24. The answers are 1, 2, and 4, unless you have clearly defined criteria for judging enjoyment, i.e., positive statement made by the learner regarding the book or concerts.

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25. Let's try to check this out. Here are 5 objectives. Identify without error the element HOW IT WILL BE DONE OR DEMONSTRATED by underlining that element in each of these objectives.

Example: Given 30 problems testing your skill in solving + and - problems with 2 digit numbers with no regrouping required, you will correctly solve 26 of the 30 correctly in 20 minutes.

1. Given a list of 20 words, the learner shall draw a circle around those words which are incorrectly spelled. Accuracy: 100%.
2. From the information given on the worksheet, complete the bar graph showing the populations of the 50 states with no more than 5% error on the total graph.
3. The learner shall solve 18 of the 20 subtraction problems with 100% accuracy.
4. Given a 12-inch ruler, the learner will correctly measure the perimeter of his desk. Accuracy: to the nearest 1/2 inch.
5. The learner shall clear the high jump bar set at 4 feet 6 inches in three out of five attempts. He shall begin from a point 15 feet from the bar for each attempt.

25.

1. Given a list of 20 words.
2. From the information given on the worksheet.
3. Solve 18 of 20 problems.
4. Given a 12 inch ruler.
5. Set high jump at 4'6".

26. You should have underlined the "Hows" **without error** in each of the objectives in frame 25. Did you do so? **If you did,** go on to frame 27. **If you did not,** you should return to frame 21.

27. You now have an opportunity to write five examples of your own. Using any subject you teach, you are to write 5 correct examples of the element of HOW IT WILL BE SHOWN. You have tucked away in your noggin that another part of the objective always tells HOW the learner is going to show he knows or can do the performance. So, write 5 examples of the second element: HOW it will be shown.

1.

2.

3.

4.

5.

27. We can't tell you right or wrong. Have your instructor check these. OK?

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28. So, we now have two parts of a performance objective. We know and we can write the two parts. We can write **what** the learner is to know or do. We can write **how** the learner is to show us he knows or can do the task. Have you noticed that objectives written from the point of view of the learner are **LONGER** than conventional course description objectives? They seem, sometimes, nearly to describe the task itself. The learner's behavior is what we are after. And, that's where we are going.

29. Now that we know what the learner is to know or do and how he is going to show it, we obviously have to know **HOW WELL** it is going to be done. So, we need to include **HOW WELL**. Could you tell how well a learner could do the task if you didn't ask? Obviously not. There's another point about this third part of the objective. You, the teacher, are waiting for enough of the objective so you can continue on in the teaching. The more specific **you** can be about how much that is, the more responsible the learner can be in producing that behavior. Learners learn in small steps and are rewarded instantly when the behavior is strong enough! Everyone benefits: you benefit from **KNOWING FOR SURE** and the learner benefits from **KNOWING WHAT IS EXPECTED**. So, how do we write this third part? Well, here are some examples:

With 90% accuracy
According to the authors of the textbook
As measured by a standardized test
To the satisfaction of the teacher
To the satisfaction of the peer group
To the satisfaction of the learner

The last three are "cop outs" in a way unless the teacher, or the peer group, or the learner establish criteria **before** the objective is begun. Then, they aren't too bad. But, the more specific you can be in telling the learner just exactly **WHAT IS EXPECTED** the more quickly he can produce that behavior.

30. Let's try some third elements which are part of performance objectives. For each example circle the element which tells **HOW WELL** the learner is to perform the task.

For example, given 10 pictures and a list of 15 sources of energy, you will identify the 5 forms of energy by circling the name of the form being used in the pictures. Minimum 9 correct.

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31. CLEAR? All right. Now, here are five performance objectives. Circle the part that tells how well the learner is to perform.

1. When given 3 paragraphs in which periods, commas, and capital letters are missing, the learner will correctly (100%) capitalize and properly place all periods and commas in the paragraph.
2. After class discussions and films concerning the Monroe Doctrine, the learner will explain orally the 3 major implications of the Doctrine on U.S. policy toward a specific Latin American country drawn by lot from a hat. The learner will be done when 5 criteria as determined by his classmates are met.
3. When given a list of 4 major causes of the Depression, the learner will in one class period write an essay in which each of the 4 causes is related to agriculture, urban life, and international trade to the satisfaction of the teacher.
4. By November 15 the learner will correctly solve 9 of the 10 problems on page 46 of the text **Math and You.** The learner will include both the working of the problems and the correct answers.
5. The learner will write 5 objectives which include all three elements. The objectives may be in any subject area which the learner determines. The objectives, to be judged correct, shall be labeled by the learner to show he knows the three elements. 100% accuracy in both tasks.

31.

1. 100%

2. 5 criteria as determined by his classmates are met.

3. To the satisfaction of the teacher.

4. Solve 9 of the 10 correctly, including both working of the problems and the correct answers.

5. 100% accuracy in both tasks.

32. Now you can recognize when the element is present. Your next task is to write 5 examples of the third element. Do so with 100% accuracy.

1.

2.

3.

4.

5.

32. We can't tell you right or wrong. Have your instructor check these. OK?

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33. Now you have your three elements for a performance objective:

What is to be known or done
How it is to be shown
How well it is to be done

Let's see if you can tell the three parts in the following performance objectives.

Identify as follows:

1. Circle and label A the element:
   What is to be known or done
2. Circle and label B the element:
   How it is to be shown
3. Circle and label C the element:
   How well it is to be done.

Example: Given (10 problems in 2 digit addition,)[B] the learner shall (solve)[A] a (minimum of 9 correctly.)[C]

Directions clear? Here are the 5. You are to identify with 100% accuracy.

1. Given 36 multiplication problems involving numbers 0 through 10, the learner shall correctly answer 90% of the problems within a 50-minute class period.
2. Given a paper with 10 rows of three pictures in each row, the learner will circle the 2 pictures in each row that begin with the same consonant sound. Minimum: 9 rows correct.
3. Given a paragraph, the learner will underline each verb in the space provided on a separate answer sheet. Minimum: 90% accuracy.
4. Given a list of high school courses, the 9th grade student shall outline a tentative 4-year program which he believes best meets his needs. The tentative program shall include courses to meet graduation requirements of his school, and the learner shall explain his course selection to his counselor. The learner shall state at least one reason for selecting each course and then give three ways in which the total tentative program will meet his specific needs.
5. The student will correctly add 18 out of 20 single digit number problems involving simple addition from a teacher prepared worksheet.

33. **Answers**

1. A. Shall answer
   B. 36 multiplication numbers 0 through 10
   C. 90% within a 50-minute class period
2. A. Circle 2 pictures in each row that begin with same consonant
   B. Given a paper with 10 rows of three pictures in each row
   C. 9 rows correct
3. A. Underline each verb
   B. Given a paragraph
   C. 90% accuracy
4. A. Outline tentative 4-year program.
   B. Outline, explain, state, give.
   C. Meet graduation requirements, state 1 reason for each course, give three ways programs meet specific needs
5. A. Will add single digit number problems.
   B. From a teacher prepared worksheet.
   C. 18 out of 20.

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34. You are now to show you can meet the third objective for this program. You are to write five performance objectives appropriate to your teaching assignment in your school. Each objective shall contain all three elements. After writing these objectives, you are to prepare enough copies of your objectives to share for a critique with your peers in your school. When you have written all 5, check carefully to be sure you have included all 3 elements. Minimum competency: 100%. 1. 2. 3. 4. 5.	34. To be checked by peers in a critique session. Write your objectives on transparencies or make enough copies to share with fellow teachers.

You now know that goal statements are broad statements which are timeless and not concerned with achievement within a specified time. You know that similar goals are statements clarifying goal statements.

You know that there are 3 parts to a performance objective. You now can write a performance objective appropriate to your school, your subject. You have met the first two competencies of this program.

At this point, get a cup of coffee. Shake your head a lot. Smile broadly. Then, you are ready to begin Part II of the program.

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PART II

35. You are now ready to begin Part II of the program. Now that you can write performance objectives you are aware that some of the objectives are "knowing" things; some of the objectives are "doing" things; some of the objectives are "valuing" things. Rather than have a great mass of each kind in an unmanageable wad, it is easier to classify the kind we want. Then we can write more clearly. A great deal of work has been done in the describing of individual learning behaviors. The most commonly used classification is the one done by Bloom, Krathwohl, and others working at the University of Chicago. Their work is available to you to read, if you'd like. It isn't the least bit scary . . . in fact, there are good examples of definition, applied objectives, and some "horse sense" type helps for you.*

36. At this point we need to introduce you to three terms for the "Domains" (or behaviors) used to describe learning:

    1. **Cognitive domain:** primarily mental and intellectual processes
    2. **Psychomotor domain:** primarily physical and neuromuscular skills
    3. **Affective domain:** primarily attitudes, values, feelings.

    Usually all three domains or behaviors are involved when we see a student showing competency. For example, in executing a particular pass play in football, the learner must **remember** the various positions of his teammates. That is a _____ process. He must **throw the ball.** That is a_____ skill. He must exhibit a **desire** to be successful. That is a _____ thing.

36. **remember** is:
cognitive domain
throw the ball is:
psychomotor domain
desire is:
affective domain

*If you'd like, Bloom and others **Handbook I Cognitive Domain,** Krathwohl and others **Handbook II Affective Domain** would both prove helpful. Your County professional Library probably has copies. If not, they are paperback and cheaply available. Order them.

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37. To continue with the example, the coach might use the following performance objectives to evaluate the learner (the passer):

COGNITIVE	DOMAIN	After 4 hours of study and chalkboard discussions, the learner shall, without reference to his PLAYBOOK, describe his assignment and the assignments of the other 10 players of the team during the execution of the 8 major pass plays described on pages 1-12 of the PLAYBOOK with 100% accuracy.
PSYCHOMOTOR	DOMAIN	After 2 weeks of practice the learner shall successfully complete 10 of the 20 pass attempts under simulated game conditions.
AFFECTIVE	DOMAIN	During the course of practice sessions, the learner shall demonstrate his desire to play by (1) attending all practices on time, (2) making positive comments about the game of football, (3) following directions to the best of his ability. These behaviors will be evaluated by the coaching staff at pre-determined times during the course of the season.

All three sections of this objective would be important to a teacher to assure that you were seeing the behavior in the domain you wish to measure. It would be a glory-osky mess to measure a player's passing skill if he never passed. Or, what would happen if he never came to practice so you could see if he could pass? Better yet, what would happen if he came to practice, was told to pass, but chose to run? It would be mighty difficult to tell whether he could meet the objectives, wouldn't it? True. So, now we need to know in what domain the learner is functioning.

Remember the terms:

_____ domain is knowing
_____ domain is doing or performing
_____ domain is feeling or valuing

37. Cognitive
Psychomotor
Affective

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38. Let's check to be sure.

Cognitive domain is _____.
_____ is doing or performing.
Affective _____ is valuing or feeling.

38.

knowing
psychomotor domain
domain

39. The task for you to accomplish now is to show that you can identify the domain of the learning behavior. Given two narratives describing learning behavior you are to circle the behavior requested. Then for each circled behavior you are to label it.

Identify as follows:

1. Circle cognitive behavior and label it C

   Example: The learner (shall remember) the alphabet in order. C

2. Circle psychomotor behavior and label it P

   Example: The learner will (do push-ups.) P

3. Circle affective behavior and label it A

   Example: The learner will (demonstrate interest) in library by . . . A

Here is one complete objective done for you with labels.

The children were (listening attentively) to the teacher and (writing) spelling words for the week into sentences. A P

Each sentence was to be correctly (punctuated.) C

40. Here are two narratives. Circle and label without error the Cognitive (C); Affective (A); and Psychomotor (P) statements.

1. The two boys volunteered to remain after school to practice their solo parts for the concert. They practiced until they could play them without sheet music and without error.
2. The girl asked a question about the map to help her identify the two mountain ranges. She needed to shade the proper colors for each elevation interval.

Did you get the two narratives correct? If you did, move to frame 42. If you did not, restudy frames 37 through 40.

40. The two boys (volunteered) A to remain after school to (practice) P their solo parts for the concert.

They (practiced) P until they could (play) P them (without sheet music) C and without error.

The girl (asked) A a question about the map to help her (identify) C the two mountain ranges. She needed to (shade) P the proper colors for each (elevation interval.) C

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41. You are now to write two short narratives of learning behavior. Each narrative is to include 2 of the three domains. You may use any subject and setting appropriate to your teaching assignment.

1.

2.

Now, **underscore** each learning behavior. Then, for each behavior label it as Cognitive, Psychomotor, or Affective. 100% accuracy.

41. Have a peer check for accuracy.

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42. You now know the difference between a goal statement and similar goals. 42.

You know the three parts of a performance objective.

You can write the three parts of a performance objective.

You know the three learning behaviors.

Now, to be sure you can use the learning behaviors in cognitive, psychomotor, and affective domains you are to do a task so we can all SEE it.

You are to read each of the objectives written below and label each as designed to evaluate **primarily** the learner's Cognitive, Psychomotor, or Affective domain. There are 5 objectives. Use C, P, and A before the objective. 100% accuracy.

1. During a series of teacher developed exercises the learner shall demonstrate ability to move the eyes from left to right and right to left without moving the head or losing focus. The teacher shall determine arrival at this competency when he has shown this skill 5 times on a record sheet. 1. P
2. When given a series of 10 words orally by the teacher, the learner will respond orally with antonym for a minimum of 8 of the 10 words. 2. C
3. The learner upon oral direction shall draw 2 circles, 2 squares, 3 intersections, 3 triangles, 2 rectangles. The degree of accuracy will be determined by satisfaction of the teacher using standard forms as a reference. 3. P
4. The learner shall repeat orally from memory the 5 basic rules for safety in using the welding equipment prior to first use of that equipment. 100% accuracy. 4. C
5. The learner shall demonstrate his interest in and appreciation for music by voluntarily participating in an extracurricular music activity during the second semester of the 9th grade. 5. A

Did you get them all correct? If you did **not,** go back to frame 39. You must be able to identify the kind of learner behavior or you'll not be ready to write in a specific domain when you need to.

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43. Let's check to be sure you can write performance objectives in each of the domains. Using the definitions of the domains as given in frames 36 and 37, you are to write **two** performance objectives in each domain. They must be 100% accurate.

Cognitive Domain

1.

2.

Psychomotor Domain

1.

2.

Affective Domain

1.

2.

43. Obviously we can't tell you if the ones you wrote are 100%. Have either a peer or the teacher check.

44. You observed, as you tried to write in the separate domains, that it is nearly impossible to write in ONE domain without using another domain in the process. For example, it is hard to measure an oral response without the child **knowing** how to hear for the directions, **how** to speak for the response, and **knowing** what it is you are asking him to recall. Right? Another example: it is hard to ask a learner to write a response unless he knows how to spell the words he needs to respond with. Right? Of course. We have, for years, asked students primarily to KNOW, or DO, or VALUE but measured his listening, his speaking, his composition, his spelling. Using the domains as you just did in frame 43, we agree to **measure in the domain for which the objective is written.** Again, an example: the learner is to recall 5 basic rules for safety in using welding equipment, it is the absence or presence of the 5 rules that we measure and credit. We do not measure that the rules are recalled in complete sentences, that the rules are recalled in pre-determined order, **unless** we include that limitation in the performance objectives.

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45. If the learner is asked to meet this performance objective:

You will recall 1 homonym for each of 10 words given you on a teacher prepared sheet. For each homonym on the list, you will recall without using a dictionary, 100% accuracy.

Would you demand the learner to use correct spelling for his response?

Circle one: Yes No

45. No

46. You said no. How right you are!! You ask the learner to meet the **recall** of the homonym part. If you had wanted to insist on measuring his spelling at the same time, you should have included it in the objective. The objective would then have read:

You will recall 1 homonym for each 10 words given you on a teacher-prepared sheet. For each homonym on the list you will recall without using a dictionary. Each homonym you use must be spelled correctly. 100% on both tasks, recall and spelling.

47. One of the criticisms about performance objectives is that they usually deal with trivia, small things that are easily observed; that they never measure those bigger things that learners are showing us they can do. For example, it is fairly easy to measure the absence or presence of a learner recalling 5 basic rules for safety in using the welding equipment. It is harder to be absolutely sure that the same learner will use the welding equipment within the limits of those same 5 basic rules, that he will use the equipment **consistently** in that fashion.

48. One of the difficulties we have in working with students is that there is such a distance between knowing economic causes of the American Revolution, the French Revolution, and relating those to the "NOW" revolution among youngsters today. Yet, we **know** there is some similarity.

Obviously, then, if we wish to write objectives for how a student problem solves or evaluates "live" data in his world of today, we have to be able to write objectives with differing amounts of sophistication.

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49. There are differing levels of difficulty and sophistication in learning, aren't there? We all know that learners forget facts after 4-6 weeks, don't we? Sometimes learners are so busy recalling facts that they never do get the concept we have defined for them. Right? So, we'd best learn to write objectives to guide their learning-to-learn in our schools. This is your task: You will learn to write performance objectives at the six levels of the cognitive domain. Shall we be about it?

50. Obviously it is easier to exercise simple recall (knowledge level). Our students show us this often. While a struggling learner can recall some things, his more able peer is conceptualizing all over the place. One of the wonderments is that the able peer may be conceptualizing without any facts while the struggler doesn't even know that a concept is something to be concerned about. If we as teachers need the concept as supported by facts to be present in the learners (both of them), **then we have to know when that learning is present.** So, we write performance objectives.

51. Bloom and his colleagues have identified 6 levels of the cognitive domain. They are from the simplest to the most complex level:

Simple
1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis

Complex
6. Evaluation

We need to be able to write objectives for each of these levels. Learn them. Learn them in order. Learn them so that you can go from lower to higher **or** higher to lower. Learn them so you can order them (sequence them). For those who learn by "cue" they spell Keaase (or, if you insist, backwards they spell Esaack). Helpful? Of course not. Time out while you learn them.

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52. So, here are all of Bloom's six levels . . . out of order. Put them in order from simple to complex. 100%

My list out of order	Your list
Comprehension	1. _____
Knowledge	2. _____
Analysis	3. _____
Application	4. _____
Evaluation	5. _____
Synthesis	6. _____

Did you get them all written? Did you get them in order?

52.

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation

If you got them all written down, hooray. But, we needed them in order from simple to complex. Did you write them that way? If you did, march on to frame 53. If you did not get them written down, back to frame 51. If you didn't get them in order, shame on you. Back to frame 51. You need to be able to recall all 6 cognitive levels in order.

53. So, the real objective of this part is to be able to write cognitive domain objectives for learners in our classrooms. We need now to define each level, to identify the elements applied to each level, and to write an objective at each level. Here we go!!!

54. **Knowledge** is level 1. Knowledge is defined as the remembering of previously learned material. It may involve almost anything from specific facts to complete theories. All that is required is recalling (remembering) specific information. Knowledge represents the lowest level of learning outcome in the cognitive domain.

55. Knowledge of specific facts or recall predicts that we could list the kinds of action words commonly used in such objectives.

Action words, in terms of learners' behaviors, are such as:

to define	to distinguish	to know
to recognize	to identify	to recall
to match	to name	to select
to memorize	to label	to list

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56. Those are not all the action words we could use. They are some common ones. Each limits the learning to the _____ level according to Bloom's Taxonomy.

56. Knowledge

57. Here are some examples of performance objectives at the simplest cognitive level: **KNOWLEDGE**.

Underline the action word which shows that each of these performance objectives is at the **KNOWLEDGE** level. 100%.

57.

After reading Chapter III in the U.S. History textbook, the learner shall list in writing, without the aid of the text, the three major battles of the Revolutionary War. 100% accuracy.

list

The learner shall list with 100% accuracy five major parts of a formal letter of introduction in terms of the order of their appearance in the letter.

list

Given two unmatched lists (list A, authors, list B, titles of books), the learner shall match the name of the author in list A with the title of the book he wrote from list B. 80% accuracy.

match

The learner will demonstrate that he can remember details after having read a story. Given a story and 5 questions with 4 answers each, the learner will first read the story. He will then read the questions and select the correct answer for each question.

remember

58. Did you get them all right? If you **did**, move to frame 59. If you did **not**, return to frame 54 and come again. You didn't catch on at the knowledge level.

59. The simplest level of the cognitive domain for the learner is the knowledge level. You are now to write one performance objective at the knowledge level, cognitive domain. You may use any subject matter appropriate to you and your teaching responsibility. Be sure you include all three elements of a performance objective.

59. Have a peer or the instructor check.

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60. The kind of action word used to describe knowledge level is a very direct kind. The learner lists, identifies, or recalls. He is easily judged as having the knowing absent or present.

61. The comprehension level of the cognitive domain is level 2. Comprehension is defined as the ability to grasp the meaning of the knowledge being learned. This may be shown by translating information from one form to another, or by interpreting materials, or by estimating future trends.

62. The second cognitive level is _____.
The first simplest level was _____.

62. Comprehension
Knowledge

63. Translating information from one form to another, interpreting materials, or estimating requires more complex behavior than remembering.

Action words, in terms of learners' behaviors, are

to translate	to transform	to illustrate
to change	to restate	to interpret
to rearrange	to demonstrate	to explain
to express	to infer	to summarize
to give examples	to generalize	to comment

64. Those are not **all** the action words we could use to handle the second level of cognition, comprehension. Looking at the list, they are much more complex than knowledge, level 1.

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65. Here are some examples of performance objectives at the second cognitive level of **COMPREHENSION**.

Underline the action word that shows that each of those performance objectives is at the **COMPREHENSION** level. 100% competency.

Given a graph showing population distribution over a given area of California and a map depicting the physical features of this same area, the learner shall explain in writing the relationship between population density and the physical environment of the area. Criterion: Three elements of population distribution and four elements of environmental constraint are to be involved in the explanation.

Explain

Given a short story to read, the learner shall summarize in 200 words the major theme of the story. The accuracy of the learner's summary will be judged by the other members of the class using a five-point rating scale they have agreed upon prior to the reading.

summarize

Using any materials or equipment from the science lab, the learner will demonstrate that light is a form of energy by setting up and operating at least two forms of energy being used for work. He may use no more than two class periods from beginning to set up until he shares with the class the two finished operations.

demonstrate

Given a written story in French, the learner shall interpret the theme of the story by summarizing the events in order from the story, and then given an example of two of the events which could occur in his own society. Minimum: agreement of his peers that this is correct.

interpret

65.

66. Did you get them all right? If you **did**, move to frame 67. If you did **not**, return to frame 65 and come again.

67. Now, think back to the **KNOWLEDGE** action words. Think again about **COMPREHENSION** action verbs. Which set were which? Here is a list of verbs. Put a **K** before those which are knowledge level. Put a **C** before those that are comprehension level. Minimum: 100%.

define	rearrange	label
demonstrate	recall	summarize

Did you get them all correct? If you did, move on to frame 68. If you missed one or more, cut back and study again frames 55 and 63. Keep the two sets separate.

67. K C K

C K C

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68. Now, using any subject in your teaching assignment, write a performance objective at the **Comprehension** level.

68. Have a peer check it . . . or the instructor.

69. Are you beginning to see that the knowledge objective(s) might well lead the learner into the comprehension level in his learning? How about that!!!

70. After the study of a particular thing, the learner will forget **facts** but will tend to recall a **concept**. In order to assure that he will recall well, we have him **apply** the learning. The third level of the cognitive domain is APPLICATION.

71. A learner then will usually go through three levels: knowledge, comprehension, before he arrives at _____.

71. Application

72. **APPLICATION** refers to the ability to use learned materials in a new and concrete situation. This may include the application of such things as rules, methods, concepts, principles, laws, or theories. Learning outcomes in this area require a higher level of understanding than those of knowledge or comprehension.

73. Application of information predicts that action words for this level might include the following:

to apply	to generalize	to choose
to organize	to use	to transfer
to restructure	to classify	to dramatize
to solve		

74. Those are not all the action words we could use. They are some of the more common ones. Can you see that they differ from the knowledge and comprehension ones? Can you see that each is an application action word?

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75. Here are some examples of performance objectives at the APPLICATION level.

Underline the action words which indicate these performance objectives to be at the APPLICATION level. Minimum: 100%.

Given a map of California's Assembly Districts, the learner shall choose, by writing the Assembly District numbers on a piece of paper, those Districts which in his judgement are gerrymandered. For each number written, the learner shall classify the reason for his judgement. 100%.

Classify

The learner shall apply his ability to attack new words by answering correctly seven out of ten items of a District-devised test of phonics and structural analysis of the Doren type.

apply

Given ten problems involving the construction of a building, the learner will apply basic geometric formulas to solve eight of the ten problems correctly.

apply

Presented with an explanation and description of what is considered by the school to be safe playground procedure for each piece of equipment, each student shall dramatize one example of safe procedure to be used with a single piece. His assignment of which piece of equipment will occur from lot drawn by him from a complete list of each piece. Satisfaction with the dramatization shall be determined by how well the audience expresses agreement with the explanation.

dramatize

Using the scientific concept that **Matter is neither created nor destroyed, it may change form,** the learner will generalize about three problems which will emerge unless solid waste disposal is solved. Minimum: 100%.

generalize

75.

76. You will notice that as we go up one level the learner is getting more involved in how he uses information. Now, let's try YOU at writing a performance objective at the application level. Use any field of knowledge for which you are accountable in your home school. Again, be sure you get all three elements of a performance objective into it.

Got it right? On to frame 77. Missing parts or plain dumb?? Back to frame 72.

76. Have a peer check it... or the instructor.

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77. So, we now can write performance objectives at knowledge, comprehension and application levels. We are half-way done with cognition. The next three levels of cognition (analysis, synthesis, and evaluation) are usually more difficult to write. Why? Because we have had little practical experience with writing them before. Most of us are dreadfully comfortable with 18 out of 20 words correct in spelling. But, analysis, synthesis, and evaluation. Well. . . . . .

78. **ANALYSIS** refers to the ability to break down material into its elements or parts so that its organizational structure may be understood. This may include identification of parts, a breakdown of the relationships between parts, and the recognition of the organizational principles involved. Obviously, this is more complex than knowledge, comprehension, and application. Before a learner arrives at analysis he usually goes through three previous cognitive levels: 1)_____ 2)_____ 3)_____

78. Knowledge, comprehension, application.

79. Did you get them all right? Good for you. Did you not??? Oooooops. Best go back to frame 53. Before you do, let me snarl a bit at you. One thing about programmed instruction that may bug you a bit: You MUST remember. Nothing is ever included in the program that you don't need. So, everything in the program is there for a purpose. You are to remember it!! End of snarl.

80. When we write a performance objective at the analysis level of the cognitive domain we use action words like the following:

to discriminate	to put into lists	to analyze
to compare	to diagram	to categorize
to diagram	to describe	to subdivide
to differentiate	to classify	to deduce

81. Those are all action words we could use. There are more, of course. Each limits the product of learning to the _____ level.

81. Analysis

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82. Here are some examples of performance objectives at the **ANALYSIS** level (cognitive domain).

You will now underline the action words in each performance objective which indicate that these performance objectives are written at the analysis level. 100%.

After reading a series of six policy speeches concerning U.S. foreign policy in Southeast Asia, the learner shall classify and describe orally to the class the U.S. posture under three headings: military aid, economic aid, and treaty agreements. The degree of accuracy shall be determined by the classes' agreement with the classification and the minimum of two examples of each of the three classifications included.

The learner, given 20 words, each of which contains three or more syllables, will syllabize the list. He may use a classroom dictionary if he wishes. All words must be syllabized with 100% accuracy.

Given a list of 20 sentences, the learner will separate all nouns which he identifies. Separation will result in two lists: a list of common nouns, and a list of proper nouns. Minimum: 90% accuracy of listing and 100% success in identification.

Upon examining 20 pictures of animals the learner shall classify by listing the name of the animal under its correct classification: Wild or domestic. Accuracy: 90%.

Did you get them all right? We didn't mean to be sneaky in the first one, but it seemed time to energize your brain a bit. All right?? Go ahead to frame 83. Didn't get them all right?? Back to frame 78.

82.

Classify and describe

syllabize

separate

classify

83. Next task: you are to write a performance objective at the analysis level. You may use any subject for your content in the performance objective. It makes more sense to be appropriate to your work, doesn't it??

83. Have a peer check it or instructor.

84. Get it? Great. Let's move on to **SYNTHESIS**. Synthesis refers to the ability to put parts together to form a new whole. This may involve production of unique communication, a new plan of operation such as a research proposal, or a set of abstract relations. Learning outcomes in this level of cognition stress creative behaviors which usually produce new patterns or structures. A great deal more complex than **knowing**, isn't it? So, synthesis is putting together. We need to be able to write performance objectives at that level.

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85. In order to write performance objectives at the synthesis level we need, again, to have some action words to use. Some usable ones are:

to write	to produce	to create ,
or originate	to design	to modify
to develop	to formulate	to construct
to compose	to plan	to manipulate
to role play		

Can you see how these are creative?? The learner has to put a good deal of "self" into it, doesn't he? He will come out with a new thing, won't he??

86. When a learner comes out with a new product, he is probably working at the _____ level of the cognitive domain.

86. Synthesis

87. Here are some examples of performance objectives at the SYNTHESIS level.

To check on your action word awareness, underline the action words which indicate that those performance objectives are at the SYNTHESIS level. 100%, of course.

87.

The learner will demonstrate knowledge of responsibility to his peers in a role-playing situation. He will be ready to play either role; aggressor or one attacked. Using one object of his choice from a ball, a pencil, or paints, the learner will role play and offer at least two solutions to the problem. Agreement of the classmates of the probable success of both solutions is competency.

Role play

Having learned the principles involved in the construction of a survival shelter, the learner will design and then explain to his peer group the advantages of his particular design. The student will be evaluated on two criteria: student constructed check list and peer group evaluation of the project design.

design

The learner will write a paragraph explaining the steps in use of a power saw. He will give directions in order step by step. He must give all steps in sequence from beginning to end. Evaluation will be based on the ability of a learner-chosen peer to duplicate the directions, in order, using an actual saw.

write

Upon completion of a four week unit of work about Greek mythology the learner shall create, with materials of his choice, a project which depicts a major theme of one of the Greek myths studied during the unit. Evaluation shall consist of two parts: (1) 50% of the learner's classmates shall be able to identify the theme depicted and (2) 75% of the originality criteria established by the class shall be met by the project.

create

Get them all right? OK go on to frame 88. Didn't you? Well, really. For heaven's sake. Mercy. Back to frame 80. Maybe you'd better begin further back . . . if you're really confused.

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88. Next task: You are to write a performance objective at the synthesis level. Be careful that you include all three elements of a performance objective. Be careful that it is putting together elements into a task which will require the learner to put a good deal of "self" into it.

88. Have a peer check it... or the instructor.

89. You now know well the five levels of the cognitive domain. You know what is involved with and you can write the knowledge level, comprehension level, application level, analysis level, and synthesis level. There is only one more: EVALUATION.

EVALUATION is concerned with the ability to judge the value of material for a given purpose. It can be judging the value of a statement, an advertisement, a novel, a poem, a research report, or some such. The judgements are based on specific pre-determined criteria. These may be internal (organization) or external (relevance). The student may use his own developed criteria, class developed criteria, or criteria obtained from an outside source.

90. In order to write objectives at this level we must be aware that the EVALUATION level involves elements of all the other categories. Obviously, if one wishes to evaluate the validity of an advertisement for a new stereo outfit, one needs to know what one is, what a woofer is, what a tweeter is, what each of those does, how they relate to quality of sound, and what the specifications of each will produce as a unit. Then, one can decide: this is (is not) the one. So, evaluation is mighty complex. It involves all prior cognitive levels: 100%.

1. _____
2. _____
3. _____
4. _____
5. _____

90.

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis

91. In order to write evaluation level performance objectives in terms of learner behavior we often use action words like these:

to judge	to evaluate	to appraise
to consider	to weigh	to rate
to conclude	to criticize	

Can you see how these involve all the earlier steps of cognition? They certainly are a long distance from the "I don't like . . ." stuff, aren't they? They'd not be the result of rapping, would they!

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92. Here are some examples of EVALUATION level performance objectives.

Underline the action words that show that these are at the EVALUATION level. OK? 100%.

The learner will demonstrate his ability to judge the difference between factual and judgemental statements by identifying 80% of the examples of both types from a teacher prepared list of 50.

Judge

At the end of the semester of sociology, the learner shall in an essay of 500 words or more evaluate his role in the peer group formed by the class. Accuracy and completeness will be in terms of the learner's use of at least six major criteria taken from the class texts.

evaluate

The learner will demonstrate knowledge of the effect of a changing society on his own life. Given a situation with at least two major changes (example: introduction of rapid transit to Indianapolis; or, immediate sale of all Forest Service Lands to citizens fleeing Los Angeles after a major quake), the learner will assess the positive and negative aspects and then conclude the value of the change in his life. He must be able to defend his conclusions based on satisfaction of both teacher and students.

assess, conclude

Given three possible solutions to a hypothetical problem dealing with air pollution, the learner shall rate each solution in terms of economic feasibility check lists.

rate

92.

93. So, all ok? If so, continue.
So, NOT ok? Back to frame 89.

94. Now you are to write an evaluation level performance objective. Again, use your own subject area, write so it is appropriate for your school assignment.

94. Have a peer check it... or the instructor.

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95. You can now write performance objectives at all six levels of the cognitive domain. How bright you are!!! So far you have learned how to:

1. Identify goal statements and similar goals.
2. Identify the three parts of a performance objective.
3. Write performance objectives.
4. Write cognitive performance objectives at all six levels.

You are now a more valuable teacher because:

You can write goals and performance objectives which learners can use to guide their work:

the result of which will be

The learners will develop self-actualization

the result of which will be

The learners will learn more efficiently

the result of which will be

More learning in less time with success

the result of which will be

Better test scores, more positive self-concept

the result of which will be

Happier students, parents, and trustees

the result of which will be

a happy you!!!

Isn't that what it is all about???

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96. You now can identify a **goal statement** as a broad, timeless goal — usually for a District or School.

You can now identify **similar goals** as clarifiers of a goal statement.

You can, also, write a performance objective including all three parts:

what the learner is to KNOW or DO
how the learner is going to show it
how well he is to accomplish it.

You just learned how to write objectives in the 6 levels of cognition (knowing)

KNOWLEDGE
COMPREHENSION
APPLICATION
ANALYSIS
SYNTHESIS
EVALUATION

The next task is to write objectives in the other two domains: **psychomotor** and **affective.** Shall we be about it??

97. The psychomotor domain deals with skill areas such as throwing, catching, writing letters, and the like. 97. 6

In those areas of the curriculum where the development of neuro-muscular coordination skills are of importance we must be prepared to evaluate the child's ability to demonstrate these skills.

Just as the cognitive domain has levels of control, so the psychomotor domain has levels of control. The cognitive domain has_____levels; the psychomotor domain has 5 levels.

98. There is not a single, accepted list of the levels of the psychomotor domain as there is a single, accepted list of the cognitive domain. So, we shall use the most commonly accepted list. It was developed by Dr. R.H. Dave who is head of the Department of Curriculum and Evaluation of the National Institute of Education in New Delhi, India. Let no one say we're not international in our perceptions!!!

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99. Think back to the last time you tried to join a game with a group of people at a picnic. Was pretty awkward at first, wasn't it? As you got more automatic, skill by skill, it began to feel natural and you wondered why you'd had such a rough time at the beginning. Learners go through the same process every time they learn a new physical skill. The usual order of becoming competent is:

Imitation:	of some observed act usually lacking neuro-muscular coordination
Manipulation:	emphasizes skill in following directions
Precision:	emphasizes accuracy, exactness control with reduction of errors
Articulation:	emphasizes coordination of a series of acts – involves accuracy and control plus elements of speed and time
Naturalization:	the act is routine – automatic and spontaneous responses – performance is natural and smooth

Learn them.

100. In your mind, recall a skill you have acquired recently. For example, learning to drive, learning to type, learning to play an outdoor game, learning to use a power saw. Remember how you wanted to do something like accelerate, type a note, return a ball, saw a straight line . . . and it **was** present in your head. You knew how it was supposed to be but the actual outcome was a mess (to put it politely)? Well, each time the learner has a neuro-muscular skill to learn he goes through _____ levels just as you did.

100. 5

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101. Here are 5 objectives. Each is in the psychomotor domain. In front of each performance objective write an abbreviation for the level you believe the learner is operating on. 100%.

The learner, having observed the demonstration of the serve, will serve the ball to the best of his ability. — Imitation

The learner will follow a three-step direction in approaching the bowling lane. — Manipulation

The learner will, using guide words, reduce the time for finding pronunciations of 10 words in the dictionary by at least 50% over the previous exercise. — Precision

The learner will combine footwork, racquet stroke, and opponent placement to serve without fault 5 out of 6 times in tennis. He will accomplish this task in 10 minutes. — Articulation

The learner will serve without fault in 2 out of 3 games of tennis. — Naturalization

101.

102. Did you get them all right? If you did, move on to the next frame. Did you miss some? Back to frame 99 and come through again. You will need to know that the 5 levels of the psychomotor domain are the order in which most students learn a neuro-muscular skill.

103. We usually write psychomotor domain performance objectives at the complex level of performance _____ _____. Then, we write the performance objectives which preceded it.

103. Naturalization

104. It is NOT true that we can see each level of the psychomotor domain independently as it develops. Sometimes the kids are doing two or three levels at the same time. This is particularly true from precision to articulation to naturalization. Is it possible that the learner could (in learning to drive a car) **always turn it on well** but still **brake badly**???

104. Yes

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105. Obviously, yes. That's how come a good pie crust can contain a really terrible filling, how come a good printer can still not spell, how come a math teacher still might err with his checkbook. We are not all **equally** skilled in all areas.

106. Here are four performance objectives in the psychomotor domain. Read each and decide at what level the performance objective is written.

A. Having completed two weeks of instruction and practice, the learner shall be able to dribble a basketball the full length of the court with 100% control, as observed by his teacher. — A. Naturalization

B. The learner will demonstrate abstract thinking by drawing a map, using symbols to represent concrete objects. The symbols will be determined by the class. The map will be of a specific area such as the classroom, playground, campus, cafeteria. The class and teacher will discuss and evaluate the reliability of each map. — B. Naturalization

C. The learner will demonstrate locomotor, axial, and combination skills to rhythmic accompaniment of his choice. Given fundamental rhythms, he will skip, jump, leap, hop, run, gallop to the best of his ability. Success will be considered as present if his total skill is exhibited in harmony with the rhythm and is continuous on command of the teacher. — C. Articulation

D. The learner will demonstrate walks, balances, and rolls. Given self-testing situations involving stunts, (such as walking on a balance beam, partner rolling, holding knee to chest and retaining balance for ten seconds, hopping on one foot and then the other for ten hops each) the learner will demonstrate each to the satisfaction of the teacher. — D. Articulation

What did you decide??

107. Remember what we said earlier?? That we **usually** write psychomotor domain performance objectives at the **naturalization level.** Sorry to appear tricky, but we usually do write at the complex level. Then we write backwards to the imitation level.

108. If we knew **more** about the psychomotor domain we probably wouldn't be so gross about it. We actually don't **know** a great deal about **HOW** such a skill develops. We **KNOW** what it looks like when it is present; we have difficulty in knowing precisely what it involves. One educator is working on that precise problem. He has currently identified some 4,000 steps involved in one dribble of a basketball. Since we want you to finish this program before you retire, let's move on.

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109. There are _____ levels in the cognitive domain.

There are _____ levels in the psychomotor domain.

109. 6, 5.

110. We have one more domain to go. The **AFFECTIVE** domain is the one where attitudes, values and emotions are dealt with. It is certainly evident that if one is learning about the American heritage one would probably have some **FEELING** about the early pioneers. If one is learning to play volleyball, the player would **ENJOY** playing it well. So, it should be evident that **usually** the affective domain is involved in both the cognitive and the psychomotor objectives. In the vast majority of learning situations all **THREE DOMAINS** are present when the learner is learning. However, to keep your learning neat and orderly, we are deliberately separating the three domains.

111. The task now is to recognize and write performance objectives in the affective domain. You will not have to write at each level, but you are required to recognize that an affective domain objective is indeed an affective domain objective. Stout heart!!!

112. There are 5 levels of the affective domain:

1. **Receiving:** willingness to attend to a specific stimulus. (From the teacher's viewpoint, it is concerned with getting, holding, and directing a student's attention.)

   Action words commonly used are:

to accept	to listen
to choose	to select
to ask	to attend

   Example: The learner shall demonstrate an awareness of his environment by listening to the teacher's directions at least 80% of the time during his first three weeks in school. Evaluation shall consist of teacher observation of the learner's behavior during this time period.

2. **Responding:** active participation on the part of the student; may be acquiescence in reading, reading beyond the assignment, choosing to read in the library beyond the rest of the group. "Interests" are commonly found here in the objective.

   Action words commonly used are:

to approve	to volunteer
to tell	to recite
to acclaim	to help

(continued on next page)

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112. (continued)

Example: The learner shall demonstrate his interest in American literature by voluntarily reading a minimum of 3 American novels referred to by the teacher during the time he is enrolled in a course in American literature. The teacher shall observe this behavior through the use of brief written or oral reports by the student about the novels he has read.

3. **Valuing:** worth or value a student attaches to a particular object, behavior, phenomenon. "Appreciation" and "attitudes" usually fall at this level.

Action words commonly used are:	to choose	to invite
	to share	to appreciate
	to support	to join

Example: The learner, after completion of an exploratory music course, shall demonstrate his interest in music by choosing to join a group whose purpose is to play music or promote musical programs in his town. Participation is the arrival at the objective.

4. **Organization:** is concerned with bringing together different values, resolving conflicts between them, beginning building an internally consistent value system. Building a philosophy of goal for the self would fit here.

Action words commonly used are:	to formulate	to relate
	to defend	to put in order
	to abstract	to define

Example: The learner will accept children of all ethnic groups in the classroom or on the playground by demonstrating his willingness to: (1) include all children in games and activities; (2) choose child regardless of ethnic group for leadership; (3) work together with all children in study groups; (4) choose children for personal friends from any group (as observed by the teacher).

5. **Characterization:** pervasive, consistent, predictable behavior, a characteristic life style. General patterns of adjustment fall in here . . . personal, social, emotional behaviors.

Action words commonly used are:	to discriminate	to complete
	to behave	to practice
	to serve	to verify

Example: After having taken a pre-test on the California Test of Personality, the section on sense of personal worth, the learner will demonstrate a more positive attitude toward himself after three one-hour, group counseling sessions. His score on the "sense of personal worth" section shall increase 1/2 of a standard deviation on a post test score on that test.

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113. Those are the 5 levels of the AFFECTIVE DOMAIN. Recall them in order from simplest to complex. 100%.

1. _____

2. _____

3. _____

4. _____

5. _____

114. Did you get them all right? If you did, go to frame 115. Miss some? Back to frame 112 and STUDY.

113.

1. Receive
2. Respond
3. Value
4. Organization
5. Characterization

115. Much of what we do in schools is aimed at the affective domain. **Write** three performance objectives in the affective domain. **Task 2:** Before each performance objective, write the level of that performance objective.

Level	Objective
_____	1. _____
_____	2. _____
_____	3. _____

115. Have a peer or instructor check.

116. It should appear obvious, if we are going to really make a positive contribution to a child, that we need to:

1. Write appropriate performance objectives for the learner.
2. Write performance objectives in all three domains: cognitive, psychomotor, and affective.
3. Write performance objectives which are appropriate to what it is we believe make a positive contribution to the individual child.

117. You have now completed exercises in the three major learning behaviors:

COGNITIVE	(mental and intellectual process)
PSYCHOMOTOR	(neuro-muscular process)
AFFECTIVE	(attitudes and value process)

Let's see if you can still tell one domain from the other.

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118. Here are 5 objectives. On the line in front of each, label the domain primarily measured. Use:

C for cognitive
P for psychomotor
A for affective

Minimum: 100%.

Domain		118.
_____	The learner, as a result of career counseling, will establish a tentative vocational goal and take appropriate steps, in terms of class selection, toward achieving that goal to the satisfaction of the learner, the counselor, and the parent.	A
_____	The learner shall, after the first nine weeks of Kindergarten, be able to catch a large size ball 50% of the time when it is thrown to him from a distance of 5 feet.	P
_____	After two weeks in the first grade, the learner will, after a classroom recess, take his seat and be ready for work without teacher reminder 90% of the time, as observed by the teacher.	A
_____	By June, 80% of the learners in the Kindergarten class will be able to name, with 100% accuracy, at least 8 parts of the body. Oral measurement by teacher.	C
_____	The learner will produce an art project using any one or combination of the following: construction paper, paints, crayons, modeling clay, scissors. He will give evidence of satisfaction with both process and product by comment or expression of satisfaction as observed by the teacher.	A

119. Did you get them all right? Good. March on. If you missed one or more, C . . . back to frame 53.
P . . . back to frame 97.
A . . . back to frame 110.

If you missed 2 or more, have you ever considered a career other than teaching?

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120. In order to articulate the learning from Kindergarten through grade 12 in a unified district, or K-6 or K-8 in an elementary district, it is necessary to write performance objectives at three levels of instruction:

Program level
Instructional level
Task level

121. Sometimes it is hard to remember that the child is sequencing his behavior. It would not do to have a massive gap in his Affective Domain, now, would it?? So, let's put this whole maze into some usable sequence for you.

122. After all, we need to Cognitive 4, 5, 6 so we can Psychomotor 5, so it will make Affective 5, don't we? Puzzling? We just said that you need to be able to analyze, synthesize, and evaluate at the naturalization level so it makes logical, behavioral sense to you. We **usually have** said, "something worthwhile to change behavior." Now we have a whole bunch of usable words to say it more precisely. Whizbang.

123. You can now recognize a goal statement, a timeless goal not concerned with achievement within a specified time. Usually Community Groups, Trustees or School Boards adopt such goal statements to give general direction to the schools, to make communication with parents and patrons easier. But, such a statement is TOO BROAD for immediate use in the classroom.

124. A statement more precisely defined is an interim statement. It more precisely, more specifically defines the goal statement and is referred to as a SIMILAR GOAL. But, those are still too broad for us, the people who teach the students in the classroom.

125. So, we take the goal statement and the similar goals and write PROGRAM LEVEL OBJECTIVES. Before we lose you, let's try an example.

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129. While the English Department was writing its PROGRAM LEVEL objectives, you were off writing yours too. We all bring them to a faculty meeting where we are going **to be sure** who is going to be responsible for what.

Write 2 program level objectives to meet the similar goal: DEVELOP SKILLS IN ORAL AND WRITTEN ENGLISH.

1.

2.

Did your objectives reflect a **program level** (all the math teachers, all the science teachers, all the teachers of your department)? If they did, onward to frame 130. If they did not, best go back to frame 125.

129. Have a peer or the instructor check these.

130. After writing performance objectives at the PROGRAM level, the school faculty will have established the overall objectives of the school and will **know** where the learner is learning the necessary skills and knowledge to meet the school's PROGRAM LEVEL performance objectives.

131. The second step in this ladder to competence is to write INSTRUCTIONAL LEVEL objectives. What it is the specific learner is learning to achieve the small steps leading to the program level objectives. A child does not bloom in one year. Right???

132. In order to pace out the steps leading to the arrival at the Program Level objectives, we write INSTRUCTIONAL LEVEL objectives. Instructional Level objectives are those specific objectives written for specific courses or subjects, usually at grade level.

Here are two examples of Instructional Level Objectives:

At the completion of the 5th grade 90% of the students will write a 100-word paragraph with no more than 10% errors in spelling and capitalization.

Upon completion of the 3rd grade, 90% of the students shall read at the grade equivalent of 3.6 as measured by the Comprehensive Test of Basic Skills, Form Q, Level 1.

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126. 1. The Trustees have adopted a goal statement that ALL CHILDREN SHOULD DEVELOP SKILLS IN READING, WRITING, SPEAKING, AND LISTENING.

2. ALL CHILDREN SHOULD:
   A. Develop ability to communicate ideas and feelings effectively.
   B. Develop skills in oral and written English.

These are examples of 1._____
and 2._____

126.

1. Goals
2. Similar Goals

127. The similar goals didn't say who was going to help the learner achieve that level of competence, did it? Nope. So, in a faculty meeting we had we agreed that the English teachers would be accountable for vocabulary (other than specific vocabulary of science, social science, math) and would be responsible for paragraph writing.

128. The English teachers promptly had a department meeting (in my school, that is, I had a meeting with me since I'm the English Department). We wrote a PROGRAM LEVEL objective to state the desired exit level for vocabulary and for paragraph writing.

These are the two objectives we wrote:

At the completion of the 8th grade, 95% of the students will write a 250-word paragraph utilizing correct sentence structure, capitalization, and spelling with 90% accuracy.

Upon completing the 8th grade, 90% of the learners shall be reading at the grade equivalent 7.0 in vocabulary as measured by the Comprehensive Test of Basic Skills, Form Q, Level 3.

They are examples of _____ level objectives, which are performance objectives directly related to district goals and reflect the desired exit levels of performance in the various curriculum areas, such as, social science, language arts, science, etc.

128.

Program

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133. Using your own grade level and your subject specialty, write 2 performance objectives at the INSTRUCTIONAL LEVEL. (You ARE remembering, aren't you, that a performance objective requires 3 parts).

1.

2.

133. Have a peer or the instructor check these.

134. All right. We now have what the learner is to know, how he is going to show it, and how well he is to do it at the grade level. So, that is still too big. The child doesn't bloom the last day of school. We now need to write the activities that are necessary for the learner to complete in order to be proficient in the skills and knowledge required to complete the Instructional Level objectives. These are called TASK LEVEL objectives. They tend to come in wee, small bits. They **must** predict that, if they are met, the learner can meet the Instructional Level objectives.

135. Here are two examples of TASK LEVEL objectives:

The learner, given a list of 20 uncapitalized sentences, shall capitalize those words that require capitalization. 100% accuracy.

The learner, given a worksheet of 20 single digit, regrouping required, addition problems, will answer a minimum of 18 correctly within 15 minutes.

Given 30 specified words containing 1, 2 or 3 syllables, the learner shall classify each word according to the number of syllables each has by marking 1, 2 or 3 next to each word. 90% accuracy required.

136. Write two TASK LEVEL objectives which will be appropriate to your grade and subject specialty:

1.

2.

136. Have a peer or the instructor check these.

137. Did you do them correctly? March on to frame 138. Goof??? Back to frame 134.

138. You are nearly done. Hang on.

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139. At the beginning of this program we told you that you had SEVEN tasks. You have now completed them!! You can now:
   1. Identify GOAL STATEMENT and SIMILAR GOALS
   2. Identify the three parts of a performance objective
   3. Write 5 performance objectives
   4. Write cognitive objectives at all 6 levels
   5. Recognize psychomotor objectives at all 5 levels
   6. Recognize and **write** performance objectives in the affective domain
   7. Recognize and write the three levels of performance objectives.

You have used, for your learning, programmed instruction. You may now smile.

ASSIGNMENT 1

Using the three major components of performance objectives as guidelines:

1. **What** must be **KNOW** or **DONE.**
2. **How** it will be **DONE** or **DEMONSTRATED.**
3. **HOW WELL** it must be done.

Correctly label, using the above numbers as answers, the following performance objectives:

A. From a given list of words and using a standard dictionary

the student will be able to look up 15 words and write the dictionary definition A. ___

without error, in a 30-minute period of time.

B. The student will be able to operate three standard type phonographs and play records on them B. ___

without error

at speeds of 33-1/3, 45, and 78 RPM.

C. The student assistant will be able to utilize the Dolch vowel game C. ___

in a simulated exercise

without error, as judged by the instructor.

D. The learner will demonstrate addition, subtraction, multiplication, and division drill skills D. ___

using the Toy Money kit

as measured by prepared questions to 90% proficiency.

E. Given a list of 15 words from Roget's Thesaurus, E. ___

the learner will find another shade of meaning for each word

with 80% accuracy as determined by the teacher.

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ASSIGNMENT 2

The learner will demonstrate his ability to recognize complete performance objectives from incomplete performance objectives by completing the following exercise without error.

Place a check mark (✔) before statements which you believe are performance objectives.

_____ 1. Kindergarten students will pick up colored blocks that correspond to the oral directions from the teacher with 100% accuracy.

_____ 2. In a test of basketball skills, fifth grade male students, using a one hand push shot, will score two out of ten shots from the free throw line attempted at a basket set at regulation height.

_____ 3. Seventh grade girls will demonstrate their appreciation of music by singing "America the Beautiful."

_____ 4. Second grade pupils read for understanding "The Three Pigs."

_____ 5. Given a series of advertisements, political brochures and/or taped statements, 80% of the students shall differentiate between emotional appeal, value judgement and factual information in an exercise devised by the teacher, with 75% accuracy.

_____ 6. From a teacher prepared list of words and using a standard dictionary, the student will correctly pronounce all of the words from the list, when called upon by the teacher.

_____ 7. Students will complete a word recognition test after three weeks of instruction.

_____ 8. By the end of the 8th grade students will be able to express themselves creatively with various art media.

_____ 9. By the end of the unit, the students will be able to edit and rewrite an incorrect paragraph and correct the capitalization, punctuation, sentence structure, and paragraph structure with 75% accuracy.

_____ 10. The students will demonstrate their knowledge of a "food chain" by completing the teacher developed diagram.

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ASSIGNMENT 3

Place a check mark (✓) to the left of each performance objective which you judge to be acceptable according to the criteria established for performance objectives. If incomplete, check in the right-hand margin any missing element.

Objective	Missing Component (if any)
1. When given three paragraphs in which periods, commas, and capital letters are missing, you will be able to capitalize correctly and place properly all periods and commas.	1. What How How well
2. After class discussions and films concerning the Monroe Doctrine, the learner will know how the Doctrine has been related to the U.S. foreign policy today.	2. What How How well
3. When given a list of four major causes of the Great Depression, you will be able to explain each one to the satisfaction of the teacher.	3. What How How well
4. After studying the material outlined below, you will be able to solve the problems at the end of the chapter involving simple fractions.	4. What How How well
5. Study the six poems listed below for the purpose of learning to enjoy poetry.	5. What How How well

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ASSIGNMENT 4

Complete the performance objectives for the following suggested areas (curriculum). They may be written at either the elementary or secondary levels. Complete any two of the six areas listed below. This assignment may be completed individually or in small groups.

1. Science
2. Reading
3. Social Science
4. Music
5. Language Arts
6. Mathematics

ASSIGNMENT 5

Five statements are given below. Please alter if necessary to make complete performance objectives.

A. In a matching test, given after a unit about famous art and artists, students in a seventh grade class will be able to match a list of fifteen artists with a list of fifteen famous paintings.

B. Eighth grade boys, dressed in P.E. uniforms, will run the 50-yard dash.

C. The student will demonstrate his understanding of a topic sentence in a paragraph.

D. The learner will show his ability to identify synonyms, homonyms and antonyms.

E. Given a list of 20 excerpts from the writings of Ernest Hemingway, you should understand how they illustrate his philosophy of life.

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ASSIGNMENT 6

Following are examples of complex and simple level performance objectives. Mark a "C" before those which are complex and a "S" before those which are simple.

1. Given the name of a famous person, the student will demonstrate his knowledge of biographical source material by listing three specific sources an author would use in writing a biography about that person.

2. Given a picture of a clock, the student will correctly tell the time to the hour, as represented on the clock.

3. The learner will demonstrate knowledge of responsibility to his peers in a role playing situation in which one child is the aggressor, and imaginary use is made of objects such as a ball, pencil, hand, or paints. The learner will be able to play the role of the aggressor or the one attacked, and will offer at least two solutions to the problems to the satisfaction of the class.

4. At the termination of the unit, learners will be able to list in writing at least 12 states not involved in the U.S. Civil War.

5. Given a problem by the teacher, each student will give orally to class at least one solution. There will be a consensus of the class and the teacher that the solution is practical.

6. The learner will discuss, evaluate, and formulate a solution for a social issue regarding name calling, ridiculing, color, clothing, speech, or physical disabilities, by participating orally in a group discussion until the problem is solved to the satisfaction of the teacher and the group.

7. The learner will arrange in order of objective reporting three articles dealing with the same topic, according to the criteria of accuracy and clarity established by the American Newspaper Association.

8. The learner will list in writing, with 100% accuracy, four works of Milton and Keats.

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PERFORMANCE OBJECTIVE BIBLIOGRAPHY

1. Preparing Instructional Objectives, Robert F. Mager, Fearon Publishers, Palo Alto, Calif.

2. Instructional Objectives Exchange, UCLA Graduate School of Education, The Center for the Study of Evaluation, Los Angeles, Calif. 90024.

3. Planning An Instructional Sequence, W. James Popham, Prentice-Hall Inc., Englewood Cliffs, New Jersey.

4. A System Approach For Education, K. E. Corrigan Associates, P. O. Box 5089, Anaheim, Calif. 92804.

5. Exemplary Education In Enterprise, microfiche cards available from San Mateo County Schools, County Government Center, 590 Hamilton Street, Redwood City, Calif. 94063 c/o Frank Mattas.

6. Systematic Approach to Reading Improvement, Ken Petrucelli, Director, California State University, Chico, Calif. 95926

7. Northern California Program Development Center, B. Keith Rose, Executive Director, California State University, Chico, Calif. 95926

8. Individualized Instruction in Continuation High Schools with Emphasis on Behavioral Objectives and Instructional Packages, Robert E. Botts, California Continuation Education Association, 1828 Alamitos Avenue, Long Beach, Calif. 90806.

9. Developing and Writing Behavioral Objectives, Educational Innovators Press, P. O. Box 13025, Tucson, Arizona 85711.

10. Behavioral Objectives Extension Service, Science Research Associates (SRA), 259 East Erie Street, Chicago, Illinois 60611.

11. Establishing Instructional Goals, W. James Popham, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

12. Systematic Instruction, W. James Popham, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

13. INSGROUP, Inc., 5855 Naples Plaza, Suite 204, Long Beach, Calif. 90803.

14. Educational Goals and Objectives, California School Boards Association, 445 Capitol Mall, Sacramento, Calif. 95814.

15. Morgan Hill Unified School District, 5 East Second Street, Morgan Hill, Calif. 95037.

16. Behavioral Objectives and Instruction, Kibler, Barker and Miles, Allyn and Bacon, Inc., Boston 1970.

17. Toward Accountable Teachers, John D. McNeil, Holt, Rinehart, Winston, Inc., 1971.